

# Gap and Opportunity Analysis

## Environmental Assessment and Gap Analysis

As part of its dynamic IT strategic planning process, DIT's Office of Strategic Policy provides continuing gap and opportunity analyses of the state's technology resources. The assessments describe general trends (taken from resources such as Gartner, META, NASICO, and MITEC), challenges or catalyzing events affecting public policy; and expectations for services. Our internal and external assessments systematically identify and target best practices, innovations and emerging technologies that can support gubernatorial priorities, and agency and customer service needs; close identified gaps; and provide more effective and efficient government services.

A gap identifies the difference between what the state's technology status is and the desired future state. Types of gaps may include:

- A lack of alignment of agency projects to the Governor's goals or priorities
- Governor's policy or agency service needs compared to current IT support
- National standards, best practices, future expectation, or level of maturity compared to Michigan IT capabilities or practices

Our gap analysis is the first step in determining how the DIT Strategic Plan should address the challenges being faced by the Department. Additionally, this analysis will build on DIT's internal strengths to identify and leverage innovative possibilities that will benefit the citizens of Michigan.

The gap analysis itself consists of two parts, an internal and external assessment. The internal assessment looks at the strengths and weaknesses of Michigan's current technology state. It identifies influencing factors that are unique to Michigan. The external assessment focuses on overall technology trends being faced by other government entities and private sector companies.

### Internal Assessment – Where Michigan Is Today

Our internal assessment focuses on the current technology environment within Michigan government. A large influence on Michigan's technology strategy is the technology install base that resulted from decades of a decentralized approach to state IT resources. This approach resulted in a "silos" of information, application and hardware solutions. Collaboration was not fostered and planning and budgeting were fragmented. The challenges facing our current technical architecture center around the need to consolidate and integrate the technology investments made while leveraging all available resources.

Michigan is no different from any state facing fiscal difficulties. Our planning and implementation of any technology strategy are constrained by budgetary factors. The state's revenues have been reduced significantly since the creation of a centralized department, and in this environment long-term strategies are more difficult to plan and implement. DIT must balance its strategic portfolio by ensuring that initiatives meet individual departmental needs and simultaneously serve enterprise needs wherever possible.

While these internal factors can be challenges, they also create opportunities for the state. With effective project management, reporting of performance metrics, and improved accountability, DIT has established itself as a value-added central service for Michigan government. Standardization of the technical architecture reduces costs and offers opportunities for collaboration to better serve our constituents. Reaching out to our internal and external stakeholders,

in reliable and repeatable processes, demonstrates our commitment to listening to our business partners and citizens, partnering for solutions, and delivering on our commitments.

The internal challenges identified include:

- **Impact of Early Retirements:** DIT lost over 300 skilled and experienced employees to an early-out retirement program, placing a drain on skill pools, increasing the workload, and affecting productivity and morale.
- **Relatively New Organization:** The new organization has merged over 3,000 resources, but operations, process and culture are continuing to mature into a true centralized model in certain areas.
- **Reliance on Legacy Systems:** Much of the state's critical processing remains on outdated legacy systems with greater support requirements.
- **Requirement to Identify Cost Savings While Continuing to Maintain Services:** The state's budget deficit mandated that DIT identify cost savings while continuing to maintain and improve service levels to its customers.
- **Need to Ensure Current and Emerging Security and Privacy Requirements are Met:** The state faces the continuing, and increasing, complexity of protecting the state's information technology resources from proliferating viruses and hackers intent on sabotaging large IT systems.
- **Statewide Standards, Rules, Protocols and Architecture for Information Technology Resources:** Previously, decentralized management did not promote use of a statewide view, and statewide standards were not defined in many areas.
- **Funding Model:** Additional funding mechanisms have not been finalized for implementation of enterprise systems. The current DIT funding model favors a departmental view of technical initiatives.
- **Complexity of the Information Technology Resources:** The state has:
  - 26 data centers in the Capitol area alone
  - More than 3,000 identified agency specific servers (669 just for email) and 12 different operating systems
  - 7 desktop operating systems on 55,000 desktops
  - 1,191 Local Area Networks (LAN) with 5 separate vendor/technology LAN infrastructures
  - Current application development environment includes over 200 active tools
  - 597 Databases developed using 18 separate vendor database management systems
  - Messaging environment includes multiple versions of 4 separate email applications (80% of the current install base is a single package).

## **External Analysis – Where The World Is Taking Michigan**

Our external assessment defines issues external to state government. Current state and national economic conditions, security concerns and the speed of change in technology are primary external factors influencing Michigan as it plans for management of IT resources. Every IT organization has limited resources and with the decline in state revenues, our primary challenge is to provide the expanded services the public is demanding. The expectation of the Michigan citizen is that state government will perform with the same speed and provide access to services at the same service level provided by the private sector's technology. The public has become accustomed to 24-hour access to business services from their home or while on the road. Assuring the public that data submitted to the state will be protected and appropriate confidentiality maintained is essential. Additionally, government is expected to be a leader in providing cost effective service delivery, cutting across agencies horizontally and vertically with local and federal government to share information, solutions and IT resources.

But, again, these factors create opportunities for the state. Budget constraints coupled with this increased demand are driving the integration of the state's architecture into a standardized set of platforms, reducing the complexity and cost of maintenance and support. Standardization also provides opportunities for integration of data, improved application interoperability, and enhanced collaboration among departments of state government. Technology advances allow the state to deploy tested solutions that get us closer to the vision of a "Connected Michigan."

The external organizational and environmental factors identified include:

- **Strategic, Transformational Role of Information Technology:** Information, technology and the organizations that manage them play an increasing strategic, transforming role in the businesses and governments they serve. Centralized IT groups by definition have an enterprise focus. This focus allows them to facilitate change, identify opportunities for efficiencies and deliver true value. Technology organizations, where successful, have become more than computer support teams. They have become an integral part of effective and efficient policy and program solutions.
- **Technology Has Become an Integral Part of the Global Economy:** A coordinated, integrated and supportive relationship among information, technology, science, and the economy and economic development is increasingly becoming an expectation among government leaders.
- **Government Technology Spending:** Most governmental entities (federal, state, county and municipalities) are still cutting IT spending when private sector has begun expanding its spending.
- **Human Capital and Sourcing:** Sourcing continues to be a major issue for technology companies. The global economy, supported by dramatically improved telecommunications capabilities, has opened an avenue to lower IT labor costs significantly. This complex issue, with implications for domestic human capital and public policies, requires a balanced approach. Cost savings must be balanced with economic and workforce impact.
- **Use of Global, International and Private Sector Standards:** The use of common IT standards among all sectors, regardless of level of government, is expected.
- **IT and Homeland Security:** IT is increasingly recognized as having a pivotal role as an element of homeland security. It is relied upon to ensure the integrity and safety of citizens' data and has become the key component in coordinating a faster response to disasters. Cyber security is becoming a major concern in protecting our country's national and local interests. This increased importance means that Michigan will need to rise to the challenge of increased security demands of our stakeholders and citizens.
- **Smart Communities, Cities Concept:** The smart cities concept has gained global acceptance. The goal is to grow and rebuild cities through integration of science, technology, and information systems, thus achieving an optimal living and working environment that is clean, efficient and secure.
- **Economic Downturn and New IT Funding Baseline:** The economic downturn has been the worst since WW II, with decreased state and IT budgets for FY's 2004 and 2005, placing a premium on a sound business case, realignment in funding models and mechanisms, cutback management and plans, and maintaining service momentum for 2004 and 2005.
- **IT Role in Management, Efficiency and Effectiveness:** The economic downturn has placed a challenge and opportunity on the IT agenda. Reengineering in the private sector has lowered the cost structure of services and processes and raised the pressure on government to do the same.
- **Inter-governmental, Cross-Boundary Approaches:** Cross-boundary approaches, or seamless services both from the citizen / consumer as well as government official perspective have become a new standard of excellence.
- **Federal Programs, Legislation, Regulation and Policies:** Federal requirements, including mandates, offer states both challenges as well as opportunities. States must deal with a number of federal issues, and can most effectively do so in a collaborative fashion. Some of the challenges and opportunities include: Homeland security, HIPAA, Patriot Act, Sarbanes-Oxley, Help America Vote Act (HAVA), A-11 and the ROI process, A-76 and sourcing.

## Technology Trends – What Lies Ahead

Our planning for the future must contend with the rapidly changing technology industry. DIT identified emerging technology trends, relying on external independent research organizations. Gartner, Forrester, and META report the following major emerging technologies across all sectors:

- Use of Mobile and Wireless Technologies
- Common Infrastructure and Architecture
- Elimination of Legacy Systems
- Consistent Look and Feel Across Web Sites
- Implementation of “Off-the-Shelf” Applications

- Expanded Electronic Payment Processes
- Information and Services Personalized to the User
- Offering Learning Through Technology
- Expanded Use of Current Enterprise Applications
- Consolidated Help Desks
- Network Access and Capacity Strategies
- Increase Graphical/Mapping Capabilities
- Store and Analyze Data from Multiple Departments
- Enhance Sharing of Data across Multiple Areas – horizontally throughout the state and vertically with other public sector entities
- Emerging Technologies
  - Text - to - Speech and Speech Synthesis (visually impaired)
  - Wireless Fidelity and 802.11b (reduce disruption and costs involved in moving people between buildings)
  - Open source desktop applications (lower cost alternative to existing applications)
  - Use of Biometrics for Identification Verification (support security, fraud applications)
  - Location “Aware” Services and Technology (transportation, parking, general safety)
  - Voice - Over - IP Services (cost reductions, increase constituent service levels)
  - IP Security Virtual Private Networks (potentially replace proprietary networks with public networks, resultant savings)
  - Open – Source Web Infrastructure Servers (assist in server integration, consolidation)
  - Speech Recognition for Telephony and Call Centers (Support those without digital service, disabled)

## Gap and Opportunity Analysis –How DIT Will Bring Michigan There

As stated earlier, the gap analysis is the first step in developing Michigan's strategic plan. Our strategic plan is the roadmap to bridge existing gaps between stakeholder priorities, external realities, internal shortcomings and our technology resources. Gaps are addressed through a series of goals, objectives, strategies and specific initiatives.

Gaps identified at the beginning of the planning cycle included:

- **Access to on-demand government services:** We have not yet expanded alternative channels of access to address digital divide considerations.
- **Staff Outreach:** More focus is needed to cement the DIT culture and create a shared enterprise view for DIT Employees.
- **Consistent delivery of real time service:** Further business process redesign is needed to identify opportunities for sharing of data and applications, to speed processing, eliminate duplicate entry of data and data quality issues; and innovate service delivery.
- **Workforce Development:** People are our most valued resource, we will develop strategies both internal and external to state government to identify, attract and retain the finest technology workforce in the country. Likewise, strategies for migrating existing staff skills to targeted architectures must be employed.
- **Partnerships:** We need work with private and public sectors to achieve better solutions with our limited resources.
- **Direct Feedback from Departments:** Decision making Forums must be established to provide ongoing and direct feedback from DIT's Departmental clients.
- **Create Ongoing Focus:** DIT is a new entity; keeping its actions aligned with Michigan's business goals will require ongoing effort. Our goals and strategies will need to change with changing expectations, technology and all the factors that affect our planning. A formal process must be implemented and institutionalized to accomplish the following:
  - Identify additional ways to reduce costs and ways to generate revenue
  - Provide integrated solutions across government jurisdictions
  - Enhance staff development
  - Continually improve security and privacy in state systems
  - Meet and exceed service needs
  - Ensure continued alignment with gubernatorial goals and policy
  - Provide additional public and citizen access to government processes
  - Prove the value of statewide, centralized management of the state's information technology resources by doing IT well, including benchmarking performance, project management, business case justification, and documenting return on investment

In order to bridge these gaps, DIT has identified the following strategic goals to bring change to the State of Michigan:

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| <b><i>Goal 1</i></b> | <b>Expand Michigan's services to reach anyone, at anytime, from anywhere</b> |
| <b><i>Goal 2</i></b> | <b>Transform Michigan's services through sharing and collaboration</b>       |
| <b><i>Goal 3</i></b> | <b>Manage technology to provide better service and faster delivery</b>       |
| <b><i>Goal 4</i></b> | <b>Make Michigan the employer of choice for technology professionals</b>     |
| <b><i>Goal 5</i></b> | <b>Create a statewide community of partnerships</b>                          |

These goals are the core of our IT strategic plan for Michigan. Each of the identified gaps has a corresponding action to address it within the strategic plan. For more detail please see Volume I (the plan itself).